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REMARKS ON THE GROUSE DISEASE.

By J. A. HARVIE BROWN, F.R.S.E., F.Z.S.

As to the causes and gradual development of the Grouse disease, I could write at some length as a naturalist, although the historical aspect should also be considered and fully treated of, and parallel statistics collected contemporaneously, of heather-burning, estate management, &c.

If all sportsmen were naturalists, believing in the sound theory and practical work of Darwin, I cannot conceive that they would fail to recognise the true causes and trace even the development. Of the *actual positive* nature of the disease I might also write at some length, but when I state that Dr. Cobbold has already investigated this and treated pretty fully of it, it will be perhaps more practical to refer to the causes and consequent means of prevention.

I believe, in common with many other naturalists, that Grouse disease is caused mainly by over-stocking, over-preservation, and the *complete* and indiscriminate slaughter of certain species of vermin (or so-called vermin), notably the Peregrine Falcon, and by the state of the young and old heather after severe late frosts, which now affect the degenerate stock more easily than in former years when birds, though less numerous, were healthier, stronger, and had a larger area of feeding-ground. The much larger number of sportsmen now coming to Scottish moors does not adequately make up for the increased number of birds, as the latter on Perthshire moors and highly-stocked grounds soon

become very wild. Many more indifferent shots, and indifferent sportsmen too, now come north for a short outing on the moors. Long ago the lairds and their friends alone shot the moors, and were content with smaller bags. Now people who pay high rents want larger bags, and cram into a week's shooting what used to be a whole season's sport. As a consequence many more birds are wounded, if not in the vital organs, in other parts, which wounds affect their constitutions, and if they live till another year they probably breed weaker-constitutioned birds. Before Peregrines were shot down and trapped and destroyed, these weakly birds were picked off, being usually the easiest captured, and the last of the covey or pack in flight. How many instances can be given—authentic instances—of Grouse disease appearing to any alarming extent, or at all, in deer-forests? This, I believe, would be well worth working out. My belief is—but I do not speak with data at my side—that if this part of the subject be investigated very few authentic records will be found of Grouse disease in the deer-forests of Scotland. And why? Because Peregrines, Martens, Wild Cats, and “vermin” are *not* slain indiscriminately in deer-forests, and the Grouse there leads a more natural and less artificial life. If reference be made to my essay on the Capercaillie of Scotland (published by David Douglas, Edinburgh), it will be seen that some natural laws as to range, distribution, and “spread” of species, have a direct and powerful bearing also upon Grouse (*op. cit.*, chap. xix., p. 107). Formerly Grouse had great and extensive areas to feed over; now owing to overstocking and perfectly reckless and ignorant interference with Nature's laws, they are “cabin'd, cribb'd, confin'd.” Formerly one bird had perhaps acres and acres to itself—or, shall we say, one covey had; now every acre, we may say, has its covey or coveys. Formerly birds were less plentiful, more healthy, and men were less greedy; now Grouse are swarming, and a most unnatural state of things exists; not satisfied with this even, men want more and more, and grudge a single bird to feed the Falcon's young. As long as they do so, so long will Grouse disease recur. A direct cause of rapid increase of Grouse is the regular system now of burning heather, a better succession of young fresh food being supplied. But the natural outcome of this is that when *late* and severe frosts do come, as

they so often do in this country, a much larger area of good feeding-ground is damaged. If there were less young heather there would be fewer birds, I believe; but should late frosts come they would be less likely to do damage on a large scale. If we must have birds at the rate of fifty or a hundred to the acre on our moors (I do not speak from statistics), we must burn our heather judiciously and well; but if we have this unnatural stock one year, we must not be surprised if the following spring a severe late frost damages, or destroys, all our fine stretches of tender young heather, and our Grouse consequently become diseased. Formerly, I believe, when heather-burning was not so common, the young heather came up to a limited and natural extent beneath the old heather, which latter, to some considerable extent, protected the former from the frosts of spring. Now the young heather is *forced up* by the burning, and it has no protection at all, as formerly. Much more might be said in support of what I have already stated, but to me so self-evident seem the causes, and the whole sequence of the facts connected with the Grouse disease, and so certain am I that in the main issues I shall be supported in what I say by those naturalists whose opinion is most worth having, that I do not think it necessary here to bring forward further proofs and statistics; but simply to repeat that the first causes of Grouse disease are to be found in over-stocking, over-preservation, ignorant and reckless slaughter of so-called vermin, greed, unnatural and too rapid burning of heather, and a wholly artificial state of Grouse-farming.

In different districts these causes may vary to some extent. In the west, for instance, if too large areas of heather are destroyed (*i.e.*, burned), where young heather takes three or four years to reappear, or is entirely supplanted by ling and grasses, and where the hill-sides get "pitted" and worn into cup-shaped holes by the naturally wet climate and great rainfall, holding thus much moisture, then Grouse do not increase in numbers, but become extinct or scarce, owing to the scarcity of natural food and then perhaps the outcry is made, not against the interference with Nature's laws in this direction, but against the super-abundance of "vermin."

Again, in Perthshire or Banffshire, or other districts where young heather rushes up as if in a hot-bed after the old heather

is burned in a single year, or at most two, and remains good for several years, the results are different, and a large stock of birds appear. But if the whole heather were burned at once and severe late spring frosts came, so would the whole young heather, some fine day, be destroyed, and probably the Grouse become extinct on larger areas.

In a country where Grouse are scarce the evil may arise from interbreeding; and indeed this evil may even be a factor on densely-stocked moors, strange as the assertion may at first blush appear, because on densely-stocked moors the interbreeding may only be less in degree, as this large stock has been produced to an unnatural extent upon an area calculated by Nature to contain a far less number of birds. In a sparsely-populated district judicious introduction of fresh blood is necessary, and even on densely-populated moors exchange of a few hundred netted brace for others from a distance would decrease the chances of disease, though I doubt if it would cure or entirely prevent it.

I have had no experience of mowing heather, and do not think I ever saw any treated in this way, so cannot speak on this point practically, though I could of course do so theoretically and draw conclusions from parallel circumstances. Thus, I know if old whin or furze be cut, it is less likely to sprout again than if holed out, at least in some districts. The atmosphere and rainfall rots and destroys the stumps of cut furze, but the loose earth turned up in holing out furze throws up to the surface old dormant seeds and fibres to the vivifying action of the air and sun.

NOTES OF A NATURALIST ON THE WEST COAST OF SPITZBERGEN.

BY ALFRED HENEAGE COCKS, M.A., F.Z.S.

(Concluded from p. 386.)

THE following mammals were met with by us in Spitzbergen —
ARCTIC FOX (*Vulpes lagopus*, L.).—The short bark of this animal was often heard above the screechings of the innumerable birds high up on the cliffs comprising the "loomeries," and where it was scrambling along in quest of such eggs or young birds as it might be able to reach. One or two were seen and one picked

up dead at Bel Sound. This specimen, which had been dead some time when we found him (July 30th), was of a light slaty-blue colour.

POLAR BEAR (*Ursus maritimus*, L.).—Our acquaintance with this species in Spitzbergen was limited to meeting with two cubs in captivity on board a sloop off Danes' Island on July 29th, and to finding some joints of Bear-meat hanging over the side of a schooner in Magdalina Bay. On board were the skins and skulls belonging to two Bears which the crew had killed on their first arrival at Bel Sound in May.

RINGED SEAL (*Phoca hispida*, Schreber; *Pagomys fætidus*, Gray, P. Z. S., 1864).—Was seen tolerably commonly all along the coast, and up to our most northerly point (about lat. $79^{\circ} 55'$). Norwegian names, Ringsøel, or Grundsøel.

GREAT SEAL (*Phoca barbata*, Fabr.).—Norwegian names,* Stor-Kobbe, Havert, or Blaa-Kobbe. Several seen in Bel Sound (both forks), and at Green Harbour, Is Fjord, on our second visit. Only one was shot, and it (after the manner of its kind) rolled off the piece of ice on which it had been sleeping, and sank.

WALRUS (*Trichechus rosmarus*, L.).—A young one was seen by some shipwrecked sailors whom we picked up at Is Fjord and brought home to Tromsö, at Green Harbour, on August 3rd, not far from where we were actually at anchor at the time; but nothing was seen of this curious monster by any of the original members of our "ship's company."

WHALES.—A good many Whales were seen by us between the Lofotens and Bear Island, as mentioned at p. 2, and, though I am not able to identify the species with any certainty, they were probably all "Finners," and may perhaps have been referable to four different species there enumerated; but it would only be misleading to attempt to insist more particularly on those attempted

* The Norwegian names for the other species of Northern Seals, chiefly as given in the Bergen Museum, are as follows:—*P. grænlandica*, Sufryg, Svartside, or Jan Mayen Søel; *P. vitulina*, Steen-Kobbe, Fjordsøel; *Cystophora cristata*, Klapmydse, Klakkekål; *Halichærus grypus*, Krumnsnudet-Søel, Graa-Søel. Most of the Swedish names, as given in the 'Voyage of the Vega,' vol. i., for the different species of Seals are similar to the Norwegian names, but the word "Kobbe," the ordinary word for Seal in Norwegian, is not used in Swedish.

identifications, which are merely guess-work. After we had arrived in Spitzbergen waters, with the exception of various bones partly overgrown with moss, on one of the Axel Islands at the entrance to Van Mijen's Bay, which had evidently been lying there for a considerable number of years, and which were possibly those of *Balaena mysticetus*, a species we did not observe alive, but which, as is well known, was formerly very plentiful in those waters, the only cetacean I have any note of is—

THE WHITE WHALE (*Beluga catodon*, Newton, P. Z. S., 1864; *Delphinapterus leucas*, Pallas. — Decidedly common round the west coast of Spitzbergen. They appear to keep, as a rule, close to the shore, and especially to frequent the heads of fjords, or other places where fresh water is discharged into the sea (as from glaciers or rivers). They are very quick, active animals, their movements being more fish-like than those of such other cetaceans as I have seen, which all have a more dignified or measured way of moving than the *Beluga*, which even applies to the small Porpoise, a species, by the way, which Professor Newton ("Notes on the Zoology of Spitzbergen," P. Z. S., 1864) is confident he saw "more than once," but which I have no recollection of seeing up in the far-north; but it is just possible that amid the greater rarities, or at least novelties, I may have omitted to notice it. Some idea of the numbers of the White Whale on the Spitzbergen coast may be gathered from the fact of a schooner, to which we paid a visit in Magdalena Bay, having on board (we were told) 250 skins, the produce of a little over two months' "fishing."

REINDEER (*Rangifer tarandus*, L.). — The fleet of sloops, schooners, &c., which arrive at Spitzbergen every spring from Hammerfest, Tromsö, and other parts of Norway in pursuit of White Whales, Walrus, and other "game," send a large contingent of hunters ashore after Reindeer, so that by the time we reached the country (towards the end of July) we found the deer driven away from the coast, and only to be met with in small numbers a long way inland. The Reindeer of Spitzbergen, judging by my extremely limited experience, are decidedly smaller than in Norway. The form of their horns in Norway is so extremely variable that I am not able to detect any difference in type between those from that country and those from Spitzbergen. The horns of all the animals killed by our party were still in the velvet, but we picked up several cast antlers, especially at Green Harbour. So

far as I can judge, I think the Spitzbergen horns correspond with the smaller size of the deer that carry them, and are perhaps rather less erratic than they so frequently are in Norway.

The other mammals mentioned by Prof. Newton are *Phoca grænlandica* (Fab.), and *Mustela erminea*, which latter, however, has not been actually obtained.

The following species of birds were obtained by us in Spitzbergen :—

1. SNOW BUNTING (*Plectrophanes nivalis*, L.).—Tolerably common at all the localities visited by us. Breeding inland in a valley running about eastwards from Green Harbour, Is Fjord (July 27th). A brood of fledged young seen by Chapman in Magdalena Bay (July 29th) on the talus at the foot of the cliffs, and another brood on Axel Island (July 31st). Several shot by various sportsmen in the southern fork of Bel Sound on July 30th. The specimens I brought home are in the black and white summer plumage.

2. PTARMIGAN (*Lagopus hemileucus*, Gould).—We fell in with three Ptarmigan soon after landing in Green Harbour, Is Fjord (July 27th). Chapman went after them and killed them all, and also a fourth which he found a short distance beyond the others. They were all old cock birds. Two, however, fell on to a crag which he could not manage to scale; the other two he kindly gave to me. They are incomparably the dirtiest and most ragged wild birds I have ever seen, and look more as if they had been prisoners among the stock of some Seven Dials bird-fancier than birds killed in full possession of their native freedom, in the wilds of Spitzbergen. The only other examples of this species met with by any of our party were an old hen and her young brood, just able to fly, on August 4th, also at Green Harbour; the party were in pursuit of Reindeer at the time, and were armed with rifles only, so that they were unable to secure any specimens. Prof. Newton, in his paper on the birds of Spitzbergen in the 'Ibis,' April, 1865, was then inclined to believe that the present species is identical with the Ptarmigans of Iceland, Greenland, and Arctic America, which three, he then thought, were probably identical. As to this I am unable to offer any opinion,* but can only corroborate his remark as to "the larger size of the hyperborean bird," my two specimens being far larger than my recol-

* Consult Dresser's 'Birds of Europe.'—ED.

lection of the Iceland Ptarmigan, and even than the Scandinavian "Rype" or Willow Grouse (*L. subalpina*), and measure, even in their much-worn state of plumage, about $9\frac{1}{2}$ in. in the wing, against 8 in. of a male Scandinavian or Scotch Ptarmigan (*L. mutus*). Moreover, my specimens agree with the male seen by Professor Newton, and with the figure given by Herr von Wright in the *Atlas of the French Expedition of 1838*, in not having "any of the entirely black feathers (on the breast) which are so distinctive of the real *L. mutus*." Nordenskiöld, in the 'Voyage of the Vega,' i., 130, says that on Spitzbergen, previous to 1872, the Ptarmigan had only been found "in single specimens," but in that year they discovered "an actual ptarmigan-fell in the neighbourhood of our winter colony, immediately south of the 80th degree of latitude. It formed the haunt of probably a thousand birds; at least a couple of hundred were shot there in the course of the winter." Messrs. Evans and Sturge ("The Birds of Western Spitzbergen," 'Ibis,' 1859, p. 169) found these birds "very abundant," which is different to the common experience.

3. TURNSTONE (*Strepsilas interpres*, L.). — I shot a single specimen in Is Fjord on August 3rd. Professor Newton (*loc. cit.*) mentions that both he and Dr. Malmgren respectively saw what they believed to be examples of this species in different parts of Is Fjord, in 1864, but my specimen is, I believe, the first of the species recorded as obtained in Spitzbergen, though this is by no means the northern limit of its range, being described by Major H. W. Feilden in an Appendix by him* to the 'Narrative of a Voyage to the Polar Sea during 1875-6,' by Capt. Sir G. S. Nares, p. 210, as "tolerably abundant in Smith Sound and the region north of it visited by the Expedition," and as breeding in the neighbourhood of the winter-quarters of the 'Alert.' In a note by the same author, in 'A Polar Reconnaissance,' by Capt. A. H. Markham, p. 334, it is described as "Apparently rather rare in Novaya Zemlya. Markham observed these, and obtained one, in Matyushin Skav." It is not mentioned in the 'Voyage of the Vega.' My Spitzbergen example is in the dark immature plumage, and was moulting.

4. WHIMBREL (*Numenius phœopus*, Linn.). — I picked up a dead Whimbrel on one of the Axel Islands, at the entrance to Van Mijen's Bay, on July 31st, this being, I believe, like the last

* Condensed from the 'Ibis,' 1877, pp. 401—412.

species, the first of its kind recorded from Spitzbergen; and in all probability this one had never been alive in that country. Its beak measures $3\frac{1}{2}$ in. to the commencement of the feathers on the top, and therefore, if the measurements given by Yarrell (3rd edit., vol. ii., p. 618) are trustworthy sexual distinctions, it is a female.

5. PURPLE SANDPIPER (*Tringa maritima*, L.).—Rather numerous. Several pairs evidently breeding some miles inland up a valley east of Green Harbour, July 27th. On this day a nest containing four highly-incubated eggs was found on the opposite side of the Haven. The place where we perhaps saw most within a short time was a short way up Van Keulen Bay, on its north coast, on July 30th; and a few miles further on, and some distance inland, we discovered, on August 1st, four little Purple Sandpipers not many days old; their upper parts were covered with a purple-black down, beautifully spotted with yellow.

6. ARCTIC TERN (*Sterna macrura*, Naum.).—Fairly common; and we found a good many of its eggs on small islands in Bell Sound, &c. On one of the Axel Islands, at the entrance to the northern fork of this Sound, I watched a pair of Terns successfully drive an Arctic Skua away from their nest.

7. IVORY GULL (*Pagophila eburnea*, Phipps).—Only seen by us at Green Harbour and Magdalena Bay. At the former place we saw Ivory Gulls several miles inland, when we were Reindeer-hunting, and Faussett observed during the day, while cutting up a Reindeer fifteen miles or more from the coast, that Ivory Gulls speedily found it out, and congregated where none had previously been in sight. At Magdalena Bay, on July 29th, we saw a good many of this species, and secured several specimens. I fancy they were mainly attracted there by a quantity of carcasses of White Whales the "krang" left after the skins and blubber had been removed by the crew of a vessel engaged in this "fishery," which we found lying at anchor in the Bay. Chapman found a pair nesting this day at Rotges Hill, but in an utterly inaccessible place.

8. KITTIWAKE (*Rissa tridactyla*, Linn.).—Within one or two of being the commonest bird on the west coast of Spitzbergen. A large flock followed the ship all day on July 24th, when at sea well clear of the north coast of Norway (lat. at noon $72^{\circ} 8'$). Much less plentiful the next day off Bear Island, and there were

not many off the South Cape and Horn Sound on the 26th; but on our way up to Green Harbour, in Is Fjord, that evening they were very abundant, and were constantly to be seen in large numbers during the whole time we were off the coast, until we arrived off Vogelsang, about lat. $79^{\circ} 55'$, where our progress was stopped by an impenetrable field of ice, and where their numbers were small. They were breeding in most of the large "loomeries" of mixed species. The only specimen I took has hind toes.*

9. GLAUCOUS GULL (*Larus glaucus*, Gm.).—We first saw two individuals of this species a short distance north of Bear Island, but as we passed Bear Island in a thick fog on the way north, and in a still thicker one on our way south, few or no birds were observed thereabouts. A few seen off South Cape, and one or two off Horn Sound: some in Is Fjord; but they could hardly be considered otherwise than scarce until we reached Magdalena Bay, where they were numerous. None observed off Vogelsang, our highest point north, but rather numerous in some parts of Bell Sound, especially in a "loomery" between Separation Point and Eden Island. They are chiefly to be seen (when undisturbed) sitting on a pinnacle of rock or ice, whence they have a good view of the surrounding scene. They appear to breed for the most part very high up the cliffs, as remarked by Professor Newton (*loc. cit.*) on the authority of Dr. Malmgren. Individuals of this species vary considerably in size. All the Glaucous Gulls that we saw were mature birds, with the exception of two seen by me in Green Harbour on August 3rd (one shot); one seen by Kjeldsen (I believe the same day, and therefore the same locality); and one seen by Chapman on the following day as we steamed along the coast on our way south. On a small low-lying island in Van Keulen Bay (near Point Ahlstrand) I picked up, on August 2nd, some tufts of feathers which had belonged to immature Glaucous Gulls, which had apparently been eaten by other birds. The young bird I shot is in the plumage of one year old and upwards—that is, it has lost most of the brown mottling; the secondaries are white, the primaries nearly so.

* *Vide* Mr. H. Saunders on the *Larinæ*, P. Z. S., 1878, p. 164. He has since found, I believe I am at liberty to state, that this is much more common than he was aware of at the time of writing.

10. RICHARDSON'S SKUA (*Stercorarius crepidatus*, Vieillot; H. Saunders, P. Z. S., 1876, p. 326).—A large flock of Kittiwakes, which followed the ship all day on July 24th, when we were to the north of the Norwegian coast, were continually waited on by Richardson's Skuas, of which there were usually from three to six, or more, in sight at once; the next day, in the neighbourhood of Bear Island, we only saw a single individual, sitting, looking rather unhappy, on a detached piece of ice. This species is common and seems generally distributed along the coast, and we saw a few as much as half a dozen miles or more inland, east of Green Harbour, on July 27th. None observed off Vogelsang, our highest point north. On our return to Green Harbour, August 3rd, I only saw one individual, and by the date of our return to Tromsö (August 9th) there was only an occasional straggler to be seen about the Fjord. We found a pair in Van Keulen Bay on August 1st with young hatched out. The efforts of the old birds to draw us away from their young were most amusing. Though we devoted a considerable time to the search, we did not discover the young, though I found one of the egg-shells. All the specimens observed by us were of the white-breasted variety.

11. FULMAR PETREL (*Procellaria glacialis*, L.).—First observed on July 24th in the open sea, to the north of Norway, one or more being in sight nearly constantly all day, and getting more numerous as we proceeded northwards, and by the time we entered Is Fjord we found them very abundant. They were rather numerous for several miles inland east of Green Harbour. At Magdalena Bay we found a "white-whaler" lying, with skins of this cetacean floating in the sea all round her, preparatory to being stowed away in her hold. Swarms of Fulmars were swimming close round the vessel's sides, elbowing and jostling each other, gorging on the scraps of blubber they obtained from the skins, and as tame as domestic poultry. We found we could catch them with a hook and line, baiting with a small scrap of "spek," literally almost as fast as we could haul them on board. On shooting some Ivory Gulls at this place, which dropped into the water, it was only by keeping up an unremitting cannonade of stones that I could keep the Fulmars off them until I could secure my specimens. They were common as far north as we went, and were among the few species of birds observed among the ice we

met with about the latitude of Bear Island on our way south (August 4th). There were still a few every now and then after we were in sight of the Norwegian coast on the 6th, and the last I saw of this species was near the head of Lyngen Fjord (east of Tromsö) on August 25th. To the collector, the Fulmar Petrel is by far the most troublesome bird I have yet made the acquaintance of, from its habit, when shot, of ejecting an oily fluid from its mouth, which stains the plumage. I selected my specimens, and then took the utmost care in handling them, but one is never safe until the skin has been actually removed. In marked contrast to the general state of the case, as far as our observations went in Spitzbergen, out of the thousands of Fulmars that we saw, we did not observe one adult, all I believe, without exception, being in a state of plumage intermediate between that of the adult and young in its second summer, described by Yarrell (3rd edit. iii., 642). The curved point of the bill is yellow, the sides buff-yellow, those of the upper mandibles being more or less streaked with dark brown; the sheath investing the nostrils almost black; the back and sides of the head a light ash-grey, getting darker on the back and wings and tail; a little brown on some of the wing-coverts; chin white in most specimens, all the rest of the under side light grey, more or less approaching to white in some specimens; the primaries a dull blue-grey, hardly slate-colour; feet and legs bluish horn-colour.

12. BRENT GOOSE (*Bernicla brenta*, Steph.).—Rather plentiful in Van Keulen Bay, Bel Sound, but not seen by us elsewhere. The geese had all moulted their quill-feathers, and could not fly, but this deficiency was in great measure made up for in their extraordinary pedestrian powers; not only the old birds, but the goslings, some of which were, at the time of our visit (July 30th to August 2nd) still in down, others half-feathered, easily outran us on rough ground. Professor Newton (*loc. cit.*) has referred to the confusion in the names for this species, which he supposes led Professor Nordenskiöld to believe that he had shot the Bernicle Goose in Bell Sound in 1858, a species which has not been met with in Spitzbergen by any other observer. Mr. Leslie, the English translator of the 'Voyage of the Vega,' has "made confusion worse confounded" by literally translating the trivial names, so that the Bernicle Goose, *Anser leucopsis* (Jenyns) appears as the "White-fronted Goose," and the Brent, to which

Baron Nordenskiöld gives Temminck's name, *Anser bernicla*, as the "Barnacle Goose," a confusion which I have not seen noticed in any of the reviews of this most interesting book. The plumage of this species in summer appears slightly ruddier than in winter, owing to their upper coverts being fringed with rusty brown.

13. PINK-FOOTED GOOSE (*Anser brachyrhynchus*, Baillon).—We met with this species at each of the localities we landed at; at least on the beach at Green Harbour, July 27th, we saw a pair of "Grey" Geese, which we were unable more particularly to identify, but as this is the only "grey" species known to occur in Spitzbergen, there is no reason to doubt that they were referable to this species. Chapman found about three pairs with goslings at Magdalena Bay (July 29th); he found their droppings and a quantity of their long quill-feathers strewn thickly about at the top of the *débris* under the precipitous cliff, and which doubtless indicated the site of their nests. Some of the goslings, in the yellow downy state, were caught and brought on board alive, where, however, they did not long survive. We were told that the Pink-footed Goose is capable of defending its young from the Arctic foxes.* The birds of this species were more advanced in the moult than the Brent, and had recovered the use of their wings.

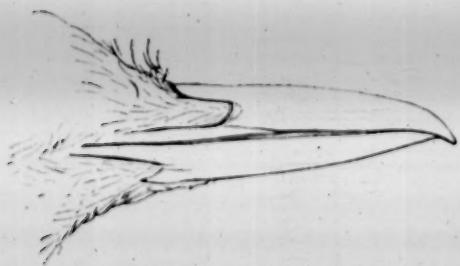
14. EIDER DUCK (*Somateria mollissima*, Fleming).—Very numerous, though very possibly, as suggested by Prof. Newton (*loc. cit.*, p. 516), "decreasing in numbers, owing to the persecution it undergoes." Chapman believed them to be "somewhat smaller and paler in colour than our home-birds."† I have no adult British specimen with which to make a comparison; two birds of the year which I have, killed in Shetland in September, are decidedly darker than my Spitzbergen ducks, but the latter appear to be absolutely similar to a Norwegian specimen. The two forks of Bell Sound were, I think, the only localities where we actually found them nesting. On the Axel Islands, in the north fork, their eggs were plentiful (July 31st). Ducks were numerous several miles inland to the east of Green Harbour (July 27th). The ducks—even when they were not, so far as we were aware, engaged in the duties of nesting—were, as a rule, very tame, and easy to shoot, but the drakes, which generally were

* Nordenskiöld believes this to be the case. 'Voyage of the Vega,' i., 126.

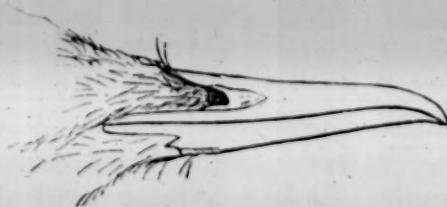
† On this and some other slight differences Professor Malmgren founded his *Somateria thulensis*.—ED.

seen in flocks composed of that sex only, were much fewer in numbers, and extremely wary, so much so that I believe three specimens made up our total bag!

15. MANDT'S GUILLEMOT (*Cephus mandti*, Newton, 'Ibis,' 1865, p. 517).—Very plentiful. Chapman observed a single Black Guillemot, early on the morning of July 24th, a short distance south of Bear Island; this would in all probability be referable to *Cephus grylle*. No others were observed until we were some way up the Spitzbergen coast, but on entering Is Fjord they became common; and from that time some were nearly always in sight, floating tamely round the ship, resting on pieces of ice, or, less commonly on the wing. There were quantities at the edge of the ice off Vogelsang. Chapman observed a few breeding at Rotges Hill, Magdalena Bay. On our second visit to Is Fjord, August 3rd, amid the general decrease in bird-life, a few of this species were still to be seen in pairs. We saw some of them the following day on our way south, and the last of them (or they may have been *C. grylle*) among the ice to the north of Bear Island that evening. Professor Newton, in his paper in 'The Ibis' on the "Birds of Spitzbergen," to which I have so frequently referred, particularises the differences between this species and *C. grylle*, so I will here merely add a sketch of the bills of the two species.



C. grylle, male.



C. mandti, male.

16. BRÜNNICH'S GUILLEMOT (*Uria brünnichi*, Sabine).—If I had not read in Professor Newton's paper that he considers the Little Auk the most abundant species in the Spitzbergen Ornithology, I should have unhesitatingly pronounced the present species to be so, which is also Chapman's opinion (of course only as far as regards the west coast, which side alone we visited); and we have the high authority of Dr. Malmgren on our side, though it is just

possible (speaking for myself) that I may have been deceived by the greater conspicuousness of the large bird into supposing it more numerous than the tiny one. Any way, it exists all along the west coast in millions. Guillemots were rather numerous at sea (July 24th) to the north of Norway, but as the common species was the only one actually found breeding on Bear Island by Dr. Malmgren, these probably belonged to the latter species. The next day, after clearing the fog and ice, to the north of Bear Island, Guillemots became very common, and were probably Brunnich's species, to which doubtless all that we saw, without exception after we actually arrived in Spitzbergen waters, belonged; *Uria troile* not having been reported, I believe, from Spitzbergen since Parry's fourth voyage, when Sir James C. Ross met with it as high as lat. 81° .* There were quantities off Vogelsang. The "loomeries" where they breed are numerous; at Green Harbour they were probably breeding, in company with Little Auks, at an estimated height of 1400 or 1500 feet above the sea, and at Rotges Hill, Magdalena Bay, nearly or quite up to the top of that precipice, which is 2000 feet high. In the early morning of August 2nd we saw two or three Guillemots, accompanied by their young ones, about which they were very anxious, swimming a little way to the east of Separation Point, Van Keulen Bay: the young could dive well. On August 6th, when at sea to the north of Norway, we occasionally saw Guillemots, which may either have been of the common species or Brunnich's, on their way southwards for the winter; but as we did not observe any young birds with them, they probably were of the common species.

17. LITTLE AUK (*Mergulus alle*, L.).—As above remarked, one of the commonest birds in Spitzbergen. Chapman saw two while we were steaming down Tromsö Fjord on July 23rd; several seen during the day (July 25th), in the neighbourhood of Bear Island; many flocks off Horn Sound on the 26th, and after that they swarmed everywhere along the coast up to Vogelsang, where we observed quantities. Breeding at an estimated height of 1400 or 1500 feet above the sea, on a cliff-face a little way inland, at Green Harbour (July 27th); and in great quantities at

* "Yarrell," 3rd edit., iii., p. 456. I have not had an opportunity of referring to the original.

Rotges Hill, Magdalena Bay (29th), probably up hill-top (2000 feet). A few pairs still in Green Harbour on our second visit (August 3rd).

18. NORTHERN PUFFIN (*Fratercula glacialis*, Leach).—In comparison with the last four species, and especially the two latter of these, the Northern Puffin must be considered scarce; still one or two could generally be detected among the swarming masses of other sea-fowl, the bright red colour on the bill rendering them very conspicuous. Prof. Newton gives careful measurements of this and the ordinary species. The apparently much greater size of the northern bird particularly struck all of us on board the 'Pallas' who had any acquaintance with the common species. On our second visit to Green Harbour (August 3rd), while other species had diminished in numbers from thousands to scores, the Puffins were about in their usual numbers, and were, therefore, comparatively much commoner. Besides these species actually obtained by us (and one or more specimens of each of which I brought home, with the accidental exception of the Pink-footed Goose), the following birds were seen, with more or less certainty:—

19. FALCON (*Falco* sp.?).—“A large, long-winged Falcon” was observed by Chapman soaring high over the water at Van Keulen Bay on the evening of July 30th. He is sure he was not mistaken as to the genus; two other members of our party were with him, and were equally convinced as to its identification. No diurnal bird of prey has been obtained in Spitzbergen, and only two other instances are on record where one has been seen. The only raptorial bird hitherto obtained in Spitzbergen is the Snowy Owl (*Nyctea scandiaca*, Newt. ed. Yarr. Brit. B. i., p. 187; Dresser, B. Europe), of which a specimen is recorded by Dr. Malmgren as having been shot between Verlegen Hook and Shoal Point, 10th July, 1861 (Newton, ‘Ibis,’ 1865). Nordenskiöld (‘Voyage of the Vega’ i., 131) mentions an example obtained at Wijde Bay, in the autumn of 1872; he says “it evidently breeds and winters at the Ptarmigan Fell.” Lamont obtained a specimen in Stor Fjord, but I am unable to give the reference. Professor Newton (*loc. cit.*) says his pilot had known of its occurrence in Spitzbergen previously, and Kjeldsen, one of our ice-pilots, was evidently aware of the same fact.

20. LONG-TAILED DUCK (*Harelda glacialis*, Selby).—I believe I

saw a single bird of this species early on the morning of August 2nd near Eden Island, Van Keulen Bay, but sitting, as I was rowing and rather cramped up, I was unable to twist round in time to get a better view of it as it flew past some distance off. Chapman doubtfully thinks this species was seen on one or two other occasions, but I have no note on the subject.

21. RED-THROATED DIVER (*Colymbus septentrionalis*, Linn).—An adult bird in Green Harbour on the night of July 27th.

This completes our bird-list. The following additional species are mentioned by Prof. Newton:—*Aegialitis hiaticula*, *Phalaropus fulicarius*, *Stercorarius pomatorhinus*, *S. longicaudus* (at least one pair of Buffon's Skua, and probably one example of the Pomatorhine, were seen by us at sea to the south of Bear Island, July 24th, but none in Spitzbergen itself), *Cygnus* ? sp., and *Somateria spectabilis*.

The species of fish we met with in Spitzbergen were only three in number:—

1. COD (*Gadus* sp. ?).—Large Cod appear to occur plentifully all along the west coast.

2. LUMPSUCKER (*Cyclopterus*, sp. ?).—I found a good many examples of a small species of Lumpsucker in the stomachs of Cod obtained in Spitzbergen, and in so fresh and perfect condition as to afford no reason to doubt that they had been obtained by the cod not far from the spot where they in turn were captured.

3. SKATE (*Raia*, sp. ?).—I picked up a dead Skate, which had been pecked by birds, but was in a perfectly fresh state, in Bel Sound.

Salmon were not met with by us in Spitzbergen, though they are said by Dunér and Nordenskiöld to occur there in "rather considerable quantities" (*vide* explanatory remarks in illustration of a map of Spitzbergen, translated from the 'Transactions of the Royal Swedish Academy of Sciences,' Stockholm, 1865, p. 20). We did not met with any vessels that I am aware of in pursuit of *Scynnus borealis* (Flem.) alluded to by Professor Newton; but I have seen plenty so engaged off the north coast of Iceland.

Lieutenant Viebroock, of the German Imperial Navy and I, with the good-natured practical assistance of the chief engineer of the 'Pallas,' constructed a dredge for the purpose of collecting marine invertebrates, but it unfortunately fouled hopelessly on a rocky bottom the first time it was put overboard, and was lost;

and as there was no more spare iron, &c., on board to make a second dredge with, I was only able to collect such few invertebrates as chanced to come my way. I found the stomachs of Cod the most prolific hunting-ground.

I was unable, from their size, to preserve a specimen of Cod, but the Lumpsuckers and Skate, together with such invertebrates as I obtained, are now in the hands of Messrs. W. Hatchett Jackson and E. B. Poulton, who will shortly, I hope, report upon them.

ROUGH NOTES IN SKYE AND EIGG.

BY HUGH MACPHERSON.

DURINISH, the north-west parish in Skye, was reached on May 3rd. Walking over the Fatach Hill ground on May 4th we saw several brace of Golden Plover; they were very tame, and never rose, though they ran swiftly. Later in the season we were much entertained by their frequent flights, taken to draw us from the vicinity of their young. The Common Sandpipers, so abundant on the banks of all the small burns, became almost equally solicitous later on. Several pairs haunted the Glendale River, as did also the Dipper; and the Black-headed Reed Bunting (although scarce) nested both on the Glendale River and on the extreme west of the property near Loch Mor. On May 6th we walked over the varied and broken ground of Waterstein, but only found some Mallard on Loch Mor. On May 7th, during a heavy evening shower, a Manx Shearwater flew up Loch Pooltiel until it reached the mouth of the Glendale, when it passed over Hamara in a westerly direction. On May 10th we saw a Blue Hare on Gearey More; subsequently we saw a blue leveret, as well as more adults, for this species, though introduced into Skye more recently than the common species, promises to thrive well on the hills, though as yet far from numerous in Durinish. On May 11th, as I was walking over to Ramasaig, a fine Merlin flew past me, as did a single Raven. During a heavy shower, May 12th, a Black-headed Gull flew into Meanish Bay; the men, who were rowing me out to their long lines, remarked on the local scarcity of this species, which they know so well from their fishing on the east coast.

Once outside Meanish Point we saw plenty of Razorbills, scattered about in parties of seven or eight. Many Puffins paddled or "whirred" past the boat, only in pairs. Cormorants, of course, flew by, and both Common and Black Guillemots were there, the latter preponderating. Two Kittiwakes followed us, looking out eagerly for scraps.

May 12th was the first day on which we heard the Corn Crake; it was not until May 30th that we had a really good opportunity of studying the method by which the Crake ventriloquises, twisting his neck rapidly from side to side. On June 1st the herd-boy, cutting grass in the garden, mowed within a few inches of a Crake's nest; at that time the female was shy, and readily deserted her nine eggs, taking flight over the very high garden-wall into the little patch of firs behind the house; gradually she became more loth to leave her precious charge, and only scuttled off a few yards into a bed of nettles when disturbed.

The Cuckoo appeared on May 3rd, and sat for two days on a stake, as if exhausted, only shifting its position to fly down and pick up some grubs, always returning to one of the stakes. Two males appeared to be all the escort that wooed that fair Cuckoo, whose crepuscular "whittling" brought down such imprecations from the Song Thrushes. The Cuckoos spent most of their leisure in flirting about the only trees in the district, the above-mentioned firs; sometimes I saw one—the hen as I thought—on the hill-side, hunting perchance for the nest of a Meadow Pipit; or was she roving in search of the eggs of other birds?

Upon May 16th the head shepherd reported that a brood of *Corvus corax* were on the point of flying; the nest was built on an inaccessible cliff, in Dibydale, so far away that our other engagements, which prevented any but incidental observation of birds, forced us to forego the pleasure of making their acquaintance. Next day I learnt that a brood of four had been destroyed at Greshornish; the bird of darkness has few friends in Skye.

On May 17th we enjoyed a long view of a fine Sea Eagle; when first espied from the top of our drag he was flying quite low over the heath, but before I got within sixty yards of him he rose to a considerable elevation; he soared over the hill-side for a minute or two, and then departed in an easterly direction. As we touched at Arisaig, May 18th, previous to being landed by the

steamer on the Isle of Eigg, some male Sheldrakes came in view. Early on May 19th a fine chick of *F. cœlebs* called me to himself; he was strong on the wing, and so independent withal that it seemed that he must be a very early bird for the West of Scotland. It was not until June 12th that an old cock Chaffinch fed one of our Skye nestlings under my bed-room window; and it was only on June 16th that two broods began to pick up the grain of the poultry.

On May 21st and subsequently I searched to no purpose for an example of my favourite *T. torquatus*, which had been seen near the house a few days earlier. I also tried in vain to find the nest of a pair of Sheldrakes, which had found some "eligible" cairn near J. S.'s cottage. Mr. John Macpherson, of Sandavore, described a nest which he had taken on the adjacent Castle Island, and kindly offered to show me a Heron's nest on a cliff at the north-west of Eigg. When I visited Eigg some ten or eleven years since the Herons from the mainland habitually patronised the Eigg fishing; but I believe that the species has not nested in Eigg, of recent years at any rate, until the present summer. On May 21st the first brood of *E. rubecula* flew; I found a nest of *R. cristatus* to-day, and, as Mr. Arthur Joss found a nest in 1881, there is every hope that it may increase. I saw this day the deserted eyrie of the Sea Eagles that until late years bred in Eigg.

On May 22nd, climbing Seuir, we broke the slumbers of five Meadow Pipits, all of which incontinently gaped their yellow-bordered red throats at the strangers. Five or six Mallards were reposing on the Seuir lochs; Teal were absent. On May 23rd we felt fairly satisfied that a pair of noisy Terns, hovering about low water, were to be referred to *S. macrura*, though their lively movements made it difficult to scrutinise their beaks as minutely as I desired to do.

May 24th being a diluvian day I walked alone to Laig, and found a cheerful little band of Oystercatchers, Gulls, and Sand-pipers feeding on the shore, chiefly about the Laig burn's mouth. "Xit-xit" announced the gay little Dipper that came speeding down a rivulet to meet me, and flitted for a hundred yards out to sea. Among the rocks near the musical sands a brace of plump Ringed Plover ran; a third, surprisingly fearless, since I approached within ten yards of it at one time without alarming it, joined company with the first two.

Mr. Joss and Mr. A. Joss, the contractors, who are keen ornithologists, and have lived a good deal on the island, mentioned two localities for *Æ. hiaticula* breeding there in June.

After leaving the Plover I strolled south, counting six Cormorants and two Black Guillemots. As I turned the corner of the cliff, suddenly up rose a large Black-backed Gull, who had been gorging on a dead lamb; as the eyes and tongue of the mammal had long departed, it seemed likely that a Raven, which I saw a few minutes later, had also shared the feast. The ground-officer had expressed his disappointment to find, on his return from Skye, that two broods of Ravens had flown in his absence from Eigg, and vowed a campaign of extermination. I was talking to him at his own door when a pair of Yellowhammers flew up. The cock was a little shy of the stranger; his mate fearlessly descended and gathered crumbs at our feet. Though a wild bird, she often enters the cottage freely, and feeds from her mistress' hand. As we left Eigg, May 26th, I saw this little hen feeding one of her young ones. Both were nesting on the threshold of the cottage, the little one fluttering its wings hungrily. The Yellowhammer is as numerous in Eigg as *E. miliaria* is in the west of Skye. But all the Eigg land birds are very tame. Corn Crakes three times ran past me in open places, and of their own will; the Twites were still tamer, two or three pairs feeding on dandelion seed every morning under the drawing-room windows, and settling on the skylights of the attics and on the roof almost as familiarly as the Mealy Redpoles perch on the soetars of the Dovre Field.

As the 'Dunara Castle' steamed away from Eigg, in the gloaming of May 26th, six or seven Manx Shearwaters appeared, skimming over the slight swell at the north end of the island. Before 4 p.m. on the 27th we saw several other Shearwaters skimming over the surf off Waterstein; I searched subsequently for a breeding-station, but found none, and, though there may well be a breeding-place in Durinish, those we saw might as easily have been nesting in either Rum or Eigg; for the distance to a bird is nothing.

On May 30th we saw a Merlin, and the next day a Kestrel. After spending the forenoon on business at Dunvegan we landed, on our way home, upon one of the Skinidin Isles, which yielded some Common Gulls' eggs, and the nest of one of the three pairs

of Red-breasted Mergansers that we noticed so frequently. The Merganser's nest was placed in a dark grey cairn, the entrance to which was "curtained" by a fine clump of lady-fern. We rather rashly took one of the seven eggs, but the old hen sat on, and no doubt her six little ones have long since haunted Dunvegan Loch. I thought I saw a single Dunlin at the end of this isle, but did not feel absolutely sure of its identification. Curlews often visited the loch, though we could not ascertain that they bred on our own hills.

June 1st being my first and last free day, I determined to work up all the Skinidin Isles; but, though the Terns, Gulls, and Ducks were fairly represented, the whelk-gatherers and their hungry dogs had forestalled us, as the remains of nests sadly proved. The ground-officer pointed out a ledge on which a pair of Peregrines built a few years since. Unhappily one of the pair was shot. A clump of white campion now grows in the Falcon's nest, as if in mockery of former glory. We found a Rock Pipit's nest with four eggs, and then I landed, and, walking back to Loch Pooltiel, took another boat to the west side of the isle.

At a place called the "kilt," in Gaelic, owing to the pattern of the basaltic columns, a number of Rock Doves and Starlings were nesting, in company with *Uria grylle*. We fancied the latter had young in the crevices, and, as I longed to procure one or two for the Zoological, to keep company with *L. troile*, which I heard described in its youth at the Zoo as a "young Vulture," I sent one of the gillies up an oar, but to no purpose. He could not even reach *C. livia*, of which the young were hatched. Egg-shells of *C. livia* and of the Starling were strewed on the rocks below the nests. But the Guillemots sat sedately on the ledges outside their nests; now and again away one went, its vermillion feet lighting up the black body colour and white epaulettes.

On June 17th we returned, but the Doves could now fly fairly, and our ladder proved too short to reach the holes of *U. grylle*. Young Gulls had been out some days, and we felt that the Guillemots should be fit to take; but the rock below their nests was sheer and smooth, and we reluctantly deferred our violation of the Birds' Act to the season of 1883. As we stood below the cliff, admiring the old birds that "gulled" us so successfully, an

old Raven and a young one passed; as we backed out of the creek we saw three Hooded Crows, three more young Ravens, and not many minutes later we saw the only couple of Jackdaws that I chanced to see in Skye.

I left for the south on the 28th, regretfully enough, as the Sea Eagle, Falcon, Chough, and Storm Petrel were all breeding, unvisited, in the district.

ORNITHOLOGICAL NOTES FROM NATAL.

BY MAJORS E. A. BUTLER AND H. W. FEILDEN, AND CAPT. S. G. REID

(Concluded from p. 335.)

Ciconia alba, Bechst., White Stork.—Commonly met with searching for food in the shallow or muddy parts of the larger vleys, in the winter months. Not often seen in any numbers, but Reid came across a flock of about thirty, on the open veldt near Colenso, on the 22nd November; these were probably on the move to their breeding quarters, wherever they may be. Butler was informed on very good authority that a few pairs bred in Natal; and a cousin of his in the Natal Mounted Police, who knew the bird well, told him that he had seen a nest himself, with eggs in it, in that year (1881), in a tree near Estcourt, at no great height from the ground.

Anastomus lamelligerus, Temm.—“An example of this curious bird was shot near Ladysmith, in a swamp, on the 8th March, 1881, by Capt. Thackeray, 6th (Inniskilling) Dragoons. Much to my regret, I was unable to preserve the specimen, as we were marching from ‘reveillez’ to sunset, and lying three in a tent at night wet through and starving! The head I gave to my waggon-driver, and begged him to carry it; but he told me afterwards that it smelt so abominably he had to throw it away. I think, however, the few feathers I saved would at any time be sufficient for the identification of the species” (F).

Ibis aethiopica (Lath.), Sacred Ibis.—A flock of eight seen flying over Bennett’s Drift Camp, about three miles from Newcastle, on the 16th September (F).

Geronticus hagedash (Lath.), Hadadah.—Very numerous at the Ingagane (= “Black Ibis” in Kaffir) River; there is a favourite roosting-place on a precipitous range of low cliffs

overhanging the river, about a mile above the drift, on the main Newcastle road. Here Reid obtained specimens, and had a good opportunity of observing their habits; but he was unable, unfortunately, to ascertain if they bred there. As many as 100 made use of these cliffs at roosting-time, leaving in small bands long before sunrise for their feeding grounds in the marshy tracts on the veldt, and returning in the same order about sundown, uttering their loud and weird cries the while. There were smaller roosting-places lower down the river, but the species was certainly not common elsewhere in the Newcastle district. We are informed on the very best authority that these birds are most delicious eating,—“fit for the Prince of Wales,” as one man described them; and Butler also pronounces them to be excellent birds for the table, in fact better than the “Knorhaan,” being more tender and highly flavoured. Butler adds the following note on its nidification:—“Found a nest at Colenso, on the 13th November. It was an ordinary stick nest, well lined with dry grass, and placed in the fork of a low bough overhanging a well-wooded stream running out of the Tugela River, and about seven feet from the ground. It contained three incubated eggs of a light dingy olive-green colour, smudged over with dark brown, and very unlike the ordinary type of Ibis eggs. The nest was solitary, and the hen bird flew off close to me as I approached it, uttering its peculiar call. I saw no other birds of that species near the spot, but they may notwithstanding sometimes build in groups” (B).

Geronticus calvus (Bodd.), “Wild Turkey.”—We were somewhat astonished to hear that Wild Turkeys were to be found in the country, on our first arrival, and equally astonished to find out what was intended by the name. They are not uncommon near Newcastle, several specimens being obtained in the winter. Reid shot a lovely one at the Ingagane on the 7th July, and saw others there; he also observed them, paired, at Rorke’s Drift on the 3rd October. They breed on the steep banks of the Buffalo or its tributaries in this neighbourhood, as Butler heard of several nests, some with eggs and others containing young birds; but we had no opportunity of examining the nests ourselves. Butler adds that he found them very good eating.

Numenius arquatus (Linn.), Curlew.—Single examples occasionally met with on the vleys in September and October, as shy

as usual. Five or six seen together at the mouth of the Umgeni, near Durban, on the 26th December (R).

Totanus canescens (Gmel.), Greenshank.—Frequently seen, singly, in the "vleys" in the Newcastle district in September and October, but no specimen obtained. Its well-known note was quite familiar to our ears.

Totanus calidris (Linn.), Redshank.—Seen at the mouth of the Umgeni River, near Durban, on the 26th December (R).

Totanus glareola (Linn.), Wood Sandpiper.—Common in the "vleys" and on the banks of streams near Newcastle in September and October, and several specimens obtained. Also obtained on the bed of a small stream near Pietermaritzburg on the 7th December by Reid.

Actitis hypoleucus (Linn.), Common Sandpiper.—Met with sparingly on all the streams and rivers in the neighbourhood of Newcastle in the winter and spring.

Recurvirostra avocetta, Linn., Avocet.—One shot near Newcastle early in October by Lieut. Stokes, R. A. (F).

Machetes pugnax (Linn.), The Ruff.—First observed by Butler, and a specimen obtained by him in the "vleys" to the east of Newcastle on the 18th September. Afterwards common, usually noticed in small flocks.

Tringa subarquata (Güldenst.), Curlew Sandpiper.—A male obtained by Reid at the mouth of the Umgeni, near Durban, on the 26th December. Several others seen.

Tringa minuta, Leisl., Little Stint.—Not uncommon about the "vleys" in October and November. Lieut. Giffard obtained three on the 12th October near Newcastle, and kindly presented one to Reid.

Gallinago aequatorialis, Rüpp.—Not numerous in the "vleys" till the middle of June, when they came in abundantly, ten couple being several times bagged by a single gun. They must breed from about December to March, for Butler heard of a nest containing fresh eggs taken at Mount Prospect in February, and of young birds being seen in the same locality in April. They are not difficult birds to shoot, lying much closer, as a rule, than the northern species, and flying more slowly and heavily.

Rhynchaea capensis (Linn.), South African Painted Snipe.—Not met with till July 20th; afterwards common in the thick sedge and grass in the "vleys." No nest was found, though

the birds were in pairs in November, and evidently going to breed.

Porzana bailloni (Vieil.), Baillon's Crake.—Frequently met with in the "vleys" to the east of Newcastle, and several specimens obtained in September and October, but no nest could be found, although a male shot by Butler on the 1st October, the measurements of which are given below, was largely developed for breeding. They breed later probably. Length, $7\frac{1}{2}$ in.; wing, $3\frac{1}{4}$ in.; tarsus, $1\frac{3}{4}$ in.; bill, from front, $\frac{1}{2}\frac{1}{2}$ in., from gape, $\frac{3}{4}$ in.; expanse, $10\frac{3}{4}$ in. Iris orange-red; bill green, dusky on the culmen; legs and feet pale olive or drab; orbital skin buff (B).

Porphyrio smaragnotus, Temm., Purple Gallinule.—This handsome bird was not uncommon in the "vleys" round Newcastle, and examples were obtained, in September and following months.

Limnocorax niger (Gm.).—One seen by Butler and Reid in a small "vley" near the junction of the Ingagane and Buffalo on the 16th October, but all their efforts to dislodge it from the thick rushes proved unavailing. Butler flushed a Rail on another occasion in a "vley" near Newcastle, which he believes to have also belonged to the present species.

Fulica cristata, Gmel., Crested Coot.—Abundant in all the "vleys" in the Newcastle district throughout the year. Many nests were found and eggs taken in September and October. Butler's notes contain the following:—"18th Sept., numerous nests building near Newcastle; one contained five eggs, chipped, another seven fresh eggs, and another five fresh eggs. The nests were of the ordinary Coot type, consisting of large sedge structures floating on the water, and built in thin or thick rushes by the side of "vleys." The eggs appeared to me to have the markings larger and bolder than those of *F. atra*. The chicks are very pretty, being covered with sulphur-yellow, and black down inclining to rich orange-red round the base of the bill. Bills bright red."

Podiceps minor, (Gm.), Little Grebe.—Common on all the larger "vleys" in October and November. A larger Grebe, which we imagine to have been *P. auritus*, was also frequently seen, but we did not obtain a specimen.

Plectropterus gambensis (Linn.), Spur-winged Goose.—Abundant in the Newcastle district all through the winter, and up to

the time of our departure in November. Numbers were shot and eaten, the young birds especially being excellent. They breed, according to trustworthy informants, in the long grass at some distance from water. We were too early for nests.

Chenalopex aegyptiacus (Linn.), Egyptian Goose.—Not seen in our district till the 6th October, when Butler observed several in "Spoonbill Vley." Specimens were obtained by some officers near this "vley" about ten days afterwards. It is reported to be extremely abundant in a large "vley" just over the Free State side of the Drakensberg to the west of Newcastle, called "Seekoe Vley."

N.B. *Nettapus auritus* (Bodd.).—We were rather disappointed at not meeting with this species. It appears to be irregular in its visits to Natal.

Anas sparsa, Smith, Black Duck.—Though not obtained in the immediate vicinity of Newcastle, it was rather common at the Ingagane River, about twelve miles away, where Reid shot several in June and July. They were very shy, and generally found singly or in pairs in the river, not in the "vleys." Iris dark brown; legs and toes orange, webs blackish; bill, upper mandible lead-colour, with rail and large saddle-shaped patch on culmen (including nostrils) black; under mandible pale flesh-colour, blackish towards the base between the rami (R).

Pæcilonetta erythrorhyncha (Gm.), Red-billed Teal.—Not so numerous as the next species, *A. xanthorhyncha*, but a well-known duck, frequently met with in small flocks in all the "vleys," and excellent eating. The sexes differ so conspicuously in size that we were inclined at first to think that these were two species, but we have come to the conclusion that there is only one.

Anas xanthorhyncha, Forst., Yellow-billed Teal.—Abundant in all the "vleys," sometimes seen in flocks of considerable size. Most excellent eating, and a decidedly pleasant change from our impracticable rations of "trek ox!" Though we found no nests, they appeared to be breeding in October. Broods of young ducks of various ages and unknown species were seen in the "vleys," but we were as fairly puzzled by the nidification of the *Anatidæ* as by that of numerous other families, and could make nothing of them.

Querquedula hottentotta, Smith, Hottentot Teal.—Obtained by Lieut. Giffard near Newcastle in November.

Spatula capensis (Smith), Cape Shoveller.—A pair seen on a "vley" east of Newcastle on the 18th September (B).

Aythia capensis (Cuv.).—First noted by Butler in the "vley" east of Newcastle, near the Ingagane, early in September. He saw a brood of five or six young ones about ten days old on the 18th of that month. We obtained several specimens in October. Reid observed three pairs of these ducks on a small open "vley" close to the main "drift" and Fort Amiel, at Newcastle, on the 7th November.

Thalassornis leuconota (Smith).—Feilden obtained the first specimen met with near the Buffalo River early in September. It was common on the "vleys" near this river and the Ingagane in October, and Butler had the good luck to find a nest and secure four eggs in one of these "vleys." His note is added below:—"Found a nest of this species on the 18th September. It was built of sedge, and very similar to a Coot's nest, but smaller, and placed in thin rushes just above the surface of the water, which was about two feet deep, and about ten yards from an island in the centre of a good-sized tank. It contained a single large greenish white egg, quite fresh, and the surrounding rushes were broken across (no doubt by the old bird) and bent down over the nest so as to conceal its contents. On revisiting the 'vley' on the 25th inst. I found another nest, precisely similar, about twenty yards off, containing three fresh eggs. This nest was probably built by the same pair of birds. The eggs were warm all day, and a small flock, consisting of three or four pairs of birds, remained close by constantly; still we never saw the hen bird go to the nest, although there were feathers in it and scattered about on the water all round. I fancy they slip off the nest and dive like the Grebes the moment they see any one approaching. Legs and feet bluish plumbeous; iris dark brown; bill dark brown, inconspicuously spotted on the sides of the upper mandible; lower mandible pale brownish yellow, with base and tip dusky brown" (B).

Procellaria macroptera, Smith.—"Seen near the shore in Durban Roads, and all along the coast, on my homeward voyage in December" (R).

Sterna macrura, Naum.—Obtained by Lieut. Giffard near Newcastle at the end of November (R).

Sterna bergii, Licht.—Several observed by Butler in the harbour at Durban, flying about among the ships lying at anchor.

Plotus levaillanti, Licht.—“One seen near the mouth of the Umgeni on the 24th, and one (doubtless the same bird or its mate) at the same place, flying close past me, on the 26th December” (R).

Sula capensis (Licht.), South-African Gannet.—Numerous outside, and one or two seen inside, the harbour at Durban at the beginning of August (R). Very abundant all along the coast between Durban and the Cape, frequently seen in hundreds together, diving into a shoal of fish.

Graculus capensis (Sparrm.), Cape Cormorant.—Observed at the entrance of the harbour at Durban on the 14th August (R). Very numerous along the coast, and at Cape Town and Simons Bay.

Graculus africanus (Gm.).—A pair seen by Butler and Reid at a small “vley,” a few miles east of Newcastle, on the 25th September. When swimming their appearance was most singular, the body being submerged, with the head and long tail alone showing above water.

ORNITHOLOGICAL NOTES FROM LOWESTOFT, SUFFOLK,
FOR 1880—81.

BY HENRY STEVENSON, F.L.S.

(Continued from p. 335.)

WILD SWANS.—Mr. Barton states that one Sunday, just before Christmas, 1880, some Wild Swans were observed off Kessingland, which flew in the direction of Lowestoft, and tried to settle on the pool of brackish water to the north of the fishing-pier. Here, however, they were soon disturbed by boys on the beach, and took wing once more for Kessingland, where, as a gunner told him afterwards, they settled out at sea, and were joined by a single bird which had remained behind; probably one that had been previously wounded.

SISKINS.—About the middle of December, 1880, a flock of ten Siskins frequented for two or three days the trees surrounding St. John’s Church, close inland.

COMMON SKUA.—On the 18th of January, 1881, Mr. Barton sent me a Common Skua, a female, in good condition, but with

the stomach perfectly empty, which had been killed on the shore at Lowestoft, that day, during a heavy gale from the north-east. The frost had been intensely severe for some days past, with much snow on the ground, and that morning the frozen snow was driven in sheets before the wind, baring the trees and house-tops, and filling every crevice in its course. The old gunner who shot it, and who for some hours had pluckily weathered the storm, secured a fine Goosander as well. Swarms of wildfowl were said to have been "whirling past" all day, with some Sheldrakes and Brent Geese in abundance. Dunlins and Snipe were also killed along the coast in considerable numbers. I had long wanted a specimen of this, by no means common, Skua on our eastern coast, and even during the great influx of Pomatorhine and smaller Skuas in 1879 I neither saw nor heard of an example of this species.

LONG-TAILED DUCK.—On the 7th of February, 1881, Barton shot a young female, which was swimming about in the harbour, and, from its wasted condition and weather-beaten plumage, had been either wounded, previously, or was a victim of "hard times" in the preceding month.

PIED WAGTAILS AND WHEATEARS.—A somewhat late arrival of both these species seems indicated by the following note, received from Mr. Barton on the 23rd of May, 1881:—"Yesterday, in walking to Benacre, and when close to Covehithe, I saw several Pied Wagtails arriving in threes and fours, and on the 21st, along the coast-line between Lowestoft and Yarmouth, Wheatears were extremely numerous."

SANDERLINGS.—During the same week, on the 22nd of May, Mr. Barton also met with a flock of eight Sanderlings near Covehithe, running about on the sands, and, by creeping on his hands and knees, was able to watch them within fifteen or twenty yards. Some were very red on the throat and breast, others as conspicuously white. In following them up, after a short flight, he was surprised at the pace they could run, fast enough to keep a man at a good trot to get anywhere near them.

SHORE LARK.—One shot at Lowestoft on the 10th of October, 1881.

OCCASIONAL NOTES.

CHOUGHS BREEDING IN DOMESTICATION.—For years when I lived at Dangstein I kept Choughs (*P. graculus*), able to fly where they liked. They once attempted to make a nest in a stoke-hole, but were disturbed, and never did so again. On my removal to East Sussex I brought the Choughs (two pairs) with me, and the next year one pair made their nest in a tower attached to the house, and laid three eggs; but they did not sit well, and the eggs were not hatched; two of them were pulled out of the nest. The one pair drove the others away, for when they first came they all roosted in the tower. I hope next spring we may be more fortunate. I believe this is the first instance of Choughs breeding under domestic conditions. We feed them on raw meat and Huntley and Palmer's biscuits.—DOROTHY NEVILL (Stillyans, Horeham Road, Sussex).

THE GADWALL IN RADNORSHIRE.—In Mr. E. Cambridge Phillips's account of the "Birds of Breconshire," recently published in 'The Zoologist,' I find no mention of the occurrence of the Gadwall, *Anas strepera*. In August, 1880, I was fortunate enough to come upon half-a-dozen of these birds on a little pool on Llandeilo Hill, near Aberedw. As there was no cover in which they could hide, they rose on seeing me and flew round the pond, on which they resettled; eventually I was enabled to approach within a few yards, when they rose again and flew off in the direction of the Wye. I have little doubt but that they had come from the large pool of Llanbyellyn, which I was unable from lack of time to visit, since the piece of water on which they were was far too small to afford them food, it being only a few feet in extent and very shallow. I may here add a few remarks which Mr. Phillips's notes have suggested to me. He mentions the Hawfinch as very rare in Breconshire. This is somewhat surprising to me, as it is abundant in the neighbouring county of Hereford. At Bishopstowe one was so bold as to come for some time, almost regularly, to eat the berries fallen from a holly tree, not a dozen yards from the windows of the house. Perhaps the reason for its rarity in Breconshire is due to the more open and bleak character of the country, as it prefers a well-wooded district, and suffers much from cold in the winter. With respect to the Tufted Duck, *Fuligula cristata*, a small flock appeared on the Wye at Bridge Sollers, in Herefordshire, a few winters ago. I expect that it is more abundant lower down the river, but it is everywhere, except near the sea, a very irregular visitant.—H. N. RIDLEY (British Museum).

ALPINE CHOUGH IN OXFORDSHIRE.—I purchased last month a specimen of this bird, which was shot by a keeper at Broughton Castle, Banbury, Oxon, on the 8th April, 1881. It was seen in the flesh by Mr. Aplin, of

Banbury, who also saw it skinned. It was to all appearance a wild bird, the wing and tail-feathers being perfect, and the bird in good condition. The stomach contained several coleopterous insects and one caterpillar. Mr. Aplin states, in a letter to me, that he himself is perfectly satisfied that the bird is a wild one, and, from its plumage and contents of stomach, I should think the same. It has previously occurred in a wild state in Heligoland, and there is no reason it should not do so in Britain.—J. WHITAKER (Rainworth Lodge, near Mansfield, Notts).

[This is the specimen which has been already noticed in 'The Zoologist' (1881, pp. 422, 471). We are sorry to disabuse our correspondent of the idea that he possesses a British-killed specimen of the Alpine Chough, in the sense in which he would understand it. "British-killed," in one sense, it is; but we have no doubt that it had previously escaped from confinement. The Alpine Chough is not migratory, and not at all likely to occur here in a wild state. Neither is our own Cornish Chough migratory, and is almost as unlikely to occur in Oxfordshire as the other.—Ed.]

RING OUZEL IN NORTHAMPTONSHIRE.—In the last week of August a Ring Ouzel was shot at Hazelbeech, in this county. As the few specimens of this bird that annually pass through this county in their autumnal migration generally arrive here during the first week in October, the appearance of this specimen at so early a date is remarkable. The bird was a male in mature plumage.—H. F. TOMALIN (24, York Parade, Northampton).

TOTANUS SOLITARIUS AT SCILLY.—I have to record the occurrence at Scilly, on the 21st September last, of the American Solitary Sandpiper, *Totanus solitarius*, Wilson (*Chloropyggius*, Vieillot). It is about the size of our Wood Sandpiper, which it much resembles, but is at once distinguishable by not having the upper tail-coverts white as in our bird. It was identified by Mr. Dorrien Smith, of Trese, Scilly, for whose collection it has been preserved by Mr. W. H. Vingoe, of Penzance, and by an American gentleman who happened to be in Penzance at the time of its arrival here. I believe this is the first recorded occurrence of this species in the British Islands.—THOMAS CORNISH (Penzance).

[Some years ago a bird of this species was shot on the Clyde in Lanarkshire, as recorded by Mr. Robert Gray, 'Ibis,' 1870, p. 292, and 'Birds of Scotland,' p. 295.—Ed.]

ROSE-COLOURED PASTOR IN JERSEY.—A fine specimen of the Rose-coloured Pastor, *Pastor roseus*, was shot here in the parish of St. Martin, on the 13th June last. It is a male in full plumage, and has been secured for the local museum. I think the species has been killed here once before, though not recorded.—J. SINEL (Bagot, Jersey).

MANX SHEARWATER IN SOMERSET.—As this is the first time I have been able to record the appearance of the Manx Shearwater, *Puffinus anglorum*, in this county, I think it worth while to send you a note of its occurrence at Milverton, quite inland,—a good fourteen miles from the Bristol Channel,—during the last week in September. It was a full-plumaged adult bird, with pure white under parts. It was most probably crossing from the Bristol to the English Channel, and pitching on the ground was unable to rise, as it was found running under a hayrick to hide itself, and was immediately slaughtered by the person who found it. Seeing that it breeds at the Scilly Islands, and, according to Mr. A. G. More, at Lundy Island also, it seems odd that the Manx Shearwater does not more frequently occur as a straggler on our coast; but, as already observed, this is the first I have seen or heard of either inland or on the coast of Somerset, though it is by no means uncommon on both coasts of Devon, especially in autumn.—CECIL SMITH (Bishop's Lydeard, Taunton).

FIRE-CRESTED REGULUS IN JERSEY.—In Ansted's 'Channel Islands' a very fair list is given of the birds of Guernsey, which applies well to Jersey, but the Fire-crested Regulus is omitted, which is quite as common here, I find, as the Goldcrest.—J. SINEL (Bagot, Jersey).

MARTINS BREEDING IN BAYSWATER.—During the last three or four years I have observed a colony of House Martins, *H. urbica*, breeding in the neighbourhood of Westbourne Terrace. Two years ago I counted over a dozen nests in that Terrace. They returned to the same spot last year, but their nesting operations were disturbed by the house-painters. It is probably on this account that they have now entirely deserted the place, and have established themselves close by in Sussex Square, where, on the west side, in July, I counted ten nests. During the daytime they might generally be seen hawking for flies over the Serpentine.—J. YOUNG (64, Hereford Road, Bayswater).

EARLY ARRIVAL OF THE JACK SNIPE.—A Jack Snipe was shot on the banks of the Cherwell, near here, and brought to us on the 15th September. This is the earliest date for its arrival in North Oxon that I am aware of; the only other example, to my knowledge, procured in September, was shot by one of our party in 1879, on the 24th of the month, and recorded in 'The Field' for that year. Since then I have heard of another specimen. It was picked up on the 23rd, having flown against the telegraph-wires.—OLIVER V. APLIN (Banbury, Oxon).

THE SMOOTH SNAKE IN SURREY.—I was much pleased during the past summer to find a snake of this species (*Coronella laevis*) by a roadside near Chobham Bridges. As I have never seen any record of its occurrence in Surrey, I think this fact may be worthy of note. It was of quiet

disposition, and allowed me to handle it without showing the least inclination to bite, and when released glided slowly away, in this respect being very dissimilar to both the Viper and the Common Snake. The situation in which I found it was very similar to its well-known haunts in the New Forest, the soil around being sandy and covered with heather. I expect it will be found to be more widely distributed than it is generally supposed.—H. N. RIDLEY (British Museum).

THE SMOOTH SNAKE AT BOURNEMOUTH.—In October, 1879, I received from a Bournemouth birdstuffer an adult specimen of the Smooth Snake, *Coronella laevis*, of which the under parts were of a beautiful salmon-colour. It died when on loan to a friend in December, 1879, and I placed it in the Oxford Museum, but its colour faded after death. I mention this because Dr. Stradling recently described, in 'The Field,' a similar variety from Germany.—H. A. MACPHERSON (Oxford).

THRESHER SHARK OFF THE COAST OF DEVON.—A Thresher (*Squalus vulpes*), fourteen feet in length, its tail measuring six feet three inches, was captured by a Brixham fishing-smack on September 15th. It was purchased by Mr. Brookes, fish merchant, Kingskerswell.—JOHN GATCOMBE (Durnford Street, Stonehouse, Devon).

SPINOUS SHARK ON THE COAST OF DUBLIN.—On the 25th September last I saw, lying in the shop of a fishmonger in William Street, Dublin, a fine specimen of the Spinous Shark (*Echinorhinus spinosus*, Blainv.), which I was informed had been captured near Skerries, about fifteen miles to the north of Dublin. This is, I believe, the first record of the occurrence of this rare fish in Ireland.—A. G. MORE (Dublin).

LARGE SWORD-FISH OFF PLYMOUTH.—On September 21st a Sword-fish was taken in a mackerel-net, near the Eddystone, eleven feet in length. The sword measured three feet and a half; depth of body proportionately small, being only one foot one inch, as reported by the person who measured it.—JOHN GATCOMBE (Stonehouse, Devon).

NOTICES OF NEW BOOKS.

Cameos from the Silver-land; or, the Experiences of a Young Naturalist in the Argentine Republic. By ERNEST WILLIAM WHITE, F.Z.S. Vol. II. London: Van Voorst. 1882.

THE first part of this work was noticed in 'The Zoolologist' for January last (pp. 37—40), and the author's narrative ended for the time with his return from a visit to the extreme north-

western provinces. The first expedition now chronicled is in a nearly opposite direction, the present volume opening with the description of a trip up the great River Uruguay, which divides the Republic of that name from the Argentine provinces of Entre Ríos and Corrientes. The scenery on this water-highway is more picturesque than on the lower Paraná; but this variety, which is not without its charms, is accompanied by greater dangers in navigation, at the same time that, owing largely to foreign colonisation and energy, there is far greater industrial development on the banks of the Uruguay than on those of the sister-tributary to the estuary of the La Plata. Fray Bentos, of Liebig's *extractum carnis* celebrity: Paysandú, famous for ox-tongues, and the process of slaughtering cattle at the "Saladeros," are successively described; the first main halting being at Concordia, where, owing to rapids higher up, the regular navigation of the Uruguay practically ends. A railway continues about a hundred miles further to Monte Caseros, and a great future is predicted for its extension. Concordia was a good base for excursions, and we select the following from the author's description of a visit to an island in the river, as conveying information upon a variety of subjects:—

"The *Helicidae*, or land-snails, are very widely distributed in genera and species over most of the eminences throughout the Republic, and one genus, the Caracol, is eaten in large quantity in Buenos Aires: indeed I knew one respectable young man whose custom it was to visit the chief cemetery of the town to gather and devour them raw: nor is it wonderful that these gasteropod mollusks, seeing that they are phytiphagous [sic], should in the ancient 'cochlearia,' as in the modern 'escargatoire,' be for fattened the table."

This is indeed an improvement upon economic funerals, or cremation, when a descendant can derive second-hand nourishment from his ancestors without even the trouble or expense of cooking. But to continue:—

"A splash attracts our attention, and, looking round, I half expected to see the gambols of the elegant porpesse (sic), but instead thereof appeared the rolling gait of the unwieldy Carpincho (*Hydrochærus capybara*), who, however, is a splendid diver, and swims remarkably well; and then just skimming the waters a most lovely pair of dark green Kingfishers with snowy ruffs (*Megacyrle torquata*) dart by, unrivalled as pescadores, whilst

aloft sails majestically the Jote (*Cathartes fætens*) ; thus employed, up glides silently the home-made canoe, with a shaggy, hoary ancient, paddling from the stern. . . . These ropes [the *Liana*], for such they resemble, suggest one use for *which they are probably intended* (?), and instinctively our eye wanders in search of a cousin of man. Here, however, he is not, although the *Stenor caraya*, as well as the *Hapale pectinata*, is found on the shores of the Upper Uruguay, but in his place are the Puma, Jaguar, Cayman, Carpincho, Gato del Monte (*Felis Geoffroyi*), the more peaceful and elegant Curassow, the Pavo del Monte (*Crax alector*), various species of Carpinteros (*Picidae*), amongst which the hoary-headed *Leuconerpes candidus* is conspicuous : *Rhopalocera* of brilliant hues, including the sedate-sailing *Euryades*, and beetles innumerable, especially of the families *Lamellicornia* and *Longicornia*."

There is much more in the same style, but we hasten to leave this menagerie, and get to some place where there is a less fearful assemblage of beasts and fowl. The next trip is to the western districts of Rioja, Catamarea, and Tucuman, now rendered accessible by lines of railway which unite in Córdova ; a tract of country in which water is the chief desideratum, except in a few valleys like that of Catamarea, where Mr. White obtained the splendid Fire-tailed Humming-bird, *Sparganura sappho*, and two of the more sober-coloured genus *Chlorostilbon*. The descriptions of these districts are very interesting, and are not entirely disfigured by an unintelligible luxuriance of words—that tropical overgrowth which so often chokes the author's meaning. Explorations were pushed to Andagala, and to Aconcagua, where some vast ruins of an Indian town and fortress exist ; thence by Salta to Injuy where, on the frontier of Bolivia, the author found himself once more in the tropical primæval forests. At Oran, where he remained fourteen days, he obtained a new member of the *Dendrocolaptidæ*, which has been named after him by Mr. P. L. Selater as *Synallaxis whitei*, and on the Sierras of Totoral, near Catamarea, he had already procured a finch which was distinguished by the same high authority from *Poospiza nigrorufa*, and named *P. erythrophrys* ('Ibis,' 1881, p. 599). Thence he returned to Salta, and came down by diligence to Tucuman.

The last excursion described is one up the Uruguay again and down the Parana. It will be news to some naturalists to learn that there are two species of Seals found in the former river, one

a large kind, with yellowish spots on the throat, the other much smaller. How far they go up it is impossible to say without a much more detailed map than we possess, the one given by the author in vol. i. being the most useless that can be imagined ; so that it is by no means easy to say within a hundred miles or so where the writer is, to say nothing of his beasts and birds. So far as we can make out, these Seals (*Otariæ* no doubt) go up to one of the many places named Concepcion ; this particular one being in about 28° S. lat. Thence Mr. White crossed the intervening land to Itapúa on the River Paraná. Thence he ascended the Iguazu, and endeavoured to reach the celebrated Falls, but only a distant glimpse of them could be obtained ; and he was obliged to take on trust (which he does most implicitly) the assertion of his companion that they "quite rival or exceed Niagara in volume." The great unexplored marshy lake, Ibera, is spoken of in befittingly awesome terms (*Omne ignotum pro magnifico*), and the author returns to Buenos Ayres by steamer.

The second volume is an improvement upon the first ; but both would have been vastly better if they had been written in plain English, and compressed into one-third of their present bulk.

Studies in Nidderdale. By JOSEPH LUCAS, F.G.S., F.M.S. 8vo, pp. 292. London : Elliot Stock. 1882.

DURING the progress of the Government Survey of this Yorkshire dale (1867—1872), in which he was professionally engaged, Mr. Lucas found time to make numerous interesting notes on zoology, botany, archaeology, etymology of place names, and other matters unconnected with the geology of the district, but having a bearing on its history, and these notes he has now collected in the volume before us.

We cannot say that they are well arranged, and the "Introductory Commentary," which appears to us a contradiction in terms, is an awkward mode of dealing with notes which apparently came to hand after the book had been printed, and which would have been better in an Appendix, with an indication of the pages to which the new notes belong. It is impossible to read the commentary by way of introduction, for the reader cannot appreciate the value of comments until he has perused

the particular pages to which they refer. This is so evident, that we wonder it did not strike the author as it strikes the critic.

It does not come within our province to examine the chapters on Danish and Roman remains, folk-lore, local legends, the origin of names, local customs, and so forth, with which the volume is interspersed, and we must confine our attention to the pages which deal with the fauna of the district explored.

Chapter XVI. is devoted to an account of the Fomud, which the author tells us is a local name for the Marten (*Martes sylvatica*), an animal which he saw alive in the summer of 1870, at High Ash-Head Moor, 1200 feet above the sea-level. The Fomud, or Fomard, he tells us, is not to be confounded with the Foumart, or Foulmart, which is the Polecat, but is derived "from O.N. *Foa*, a fox, and *Mördr*, Dan. *Maard*, a marten = the Fox-marten—as we say the Marten-cat" (p. 133).

He adds:—"While *Fomard* is thus quite a different name from *Foulmart*, this latter is equally an independent name, and is simply the A.S. words *Ful*, foul, and *mærd*, or *meard*, a Marten, Weasel, Stoat, &c. the generic name. This I gather from the old spelling of Foul without the *o*, as in King's 'Vale Royal,' 1656, p. 18, and the lines cited by Brockett from 'The Cherry and Sloe.'"

From the mention of one specimen only, we may infer that the Marten is a rare animal in Nidderdale, although it is still occasionally to be met with in other parts of Yorkshire. Messrs. Clarke and Roebuck, in their 'Handbook of Yorkshire Vertebrates,' 1881, give the following instances of its recent occurrence:—"One, Lees Head, near Whitby, fifteen or twenty years ago; another in 1877; Cannon Hall Park, Barnsley, about 1878; and Buckden, Wharfedale, winter of 1880" (p. 6).

Chapters XVII. to XXII. are devoted to an account of the Birds of Nidderdale, and herein will be found some interesting remarks on the haunts and habits of species observed by the author, as well as on the derivation of some of the provincial names noted by him.

In the absence of any recent record of the Golden Eagle in the district, the names Arna Nab (O.N. *arna*, gen. plur. of *örn*, an Eagle, and Dan. *næb*, projecting point of a hill, *i. e.* Eagle's point), Arncliff and Arngill indicate that it formerly bred on these hills. Buzzards are occasionally seen on the moors, and the

Rough-legged Buzzard is said to be commoner here than the Common Buzzard. The Merlin, too, breeds on the moors.

The Pied Flycatcher breeds in Bolton Woods, near Barden Tower, Wharfedale; at Bewerley and at Harefield Wood, Pately Bridge, Nidderdale; and at Hackfall, near Masham on the Ure. All these are deep wooded valleys. This bird rears two broods in the course of the summer, and the first brood is brought off in May (p. 140).

The Raven, which has given its name to a great many places, is now confined to the wildest and most elevated parts of the West Riding. Mr. Lucas has only seen it twice—at Otley Chevin, and on the summit of Pen-y-ghent.

The Nuthatch is rare in the district, and was only seen once, in the deep wooded gorge at Hackfall, at an elevation of 500 feet.

The pages on the Spectre Hound, and the Dog and its folklore (pp. 146—157) are entirely out of place in a chapter on birds.

A correspondent some time since wrote to ask if we could inform him where House Martins used to build before there were houses in Britain. The following note, by Mr. Lucas (p. 159), supplies, in some measure, an answer to the enquiry:—

“The House Martin seems to be one of those creatures whose fortunes, to a certain extent, follow those of man. I fancy that the Celt on coming to these islands must have found very few Martins, and those few only in localities where there were limestone cliffs for them to build against. Nor is it probable that the Romans found many more. The Martin could not have become the very generally distributed and the common bird it now is for centuries after the construction of stone houses with mortared walls afforded it a site for its marvellous nest.”

One of these natural nesting-places of the Martin may be seen at Kilnsey Crag, Wharfedale, a magnificent beetling cliff of limestone that rises abruptly from the level of the river to a height of about 165 feet.

The Rock Dove breeds at Guy’s Cliff and Brimham Rocks. “On May 13th, 1869, one flew out of a hole bored for more than a yard into the peat on the top of a crag amongst the Hare Head rocks. A yard from the nest I picked up two eggs, one broken, the other addled” (p. 172). Might not this have been a Stock

Dove? The position of the nest seems to favour this supposition, though the Stock Dove is not included by Mr. Lucas amongst the birds of Nidderdale.

We have not space to follow him through the entire list, and will therefore conclude our extracts with one relating to the Red Grouse, a bird which Mr. Lucas has had many favourable opportunities for observing in its natural haunts:—

“It has been my good fortune,” he says, “to spend nine successive years on and around the moors, and to have sat among the long heather in the fresh spring evenings, listening to the melodious clamour of the piping birds.

“The Grouse is a capricious bird in its choice of residence. The fact that they do not abound everywhere on the moors is doubtless not without its influence on the leases of moors. They are most plentiful in the zone between 1000 and 1500 feet, and do not go much above 1700. Spots where bilberries ripen, kept moist by springs, and with a southerly exposure, attract them in autumn, though they may lie under a northern ‘edge’ in spring. For their nests they like broad shallow hollows with springs at the edges, and a flat ridge at least on one side, on to which they adjourn to crow and sun themselves. ‘Cock-lades’ is the name of one of these ‘Riggs’ on the moors, west of the river Washburn. What a flood of beauty is shed upon the word when we learn that it means ‘the playing-ground’ of the moor-cock! They build also in the peat in deep stream-courses. Here is a description of two nests:—No. 1, May 10, 1871. A light nest, beside a deep stream-course in sandstone. Made of round rushes, a few feathers mixed: $7\frac{1}{2}$ inches across. Seven eggs; pale grey, irregularly speckled and blotched. No. 2, same date. Deep stream-course, in peat under tuft of grass; exposure N., sheltered. Made of grass; 7 inches across. Ten eggs. Many young Grouse are hatched before this; and it is astonishing how fast they grow, how soon they are able to fly, and how strong they are on the wing.”

In a summary of the Ornithology of the district (pp. 175, 176), Mr. Lucas gives a table showing the distribution of the different species observed by him, and the various elevations at which they were respectively met with.

A Glossary of some of the words used in the dialects of Nidderdale, with which the volume concludes, shows a considerable amount of research, and forms a very useful appendix to what is in many respects an interesting, although, as we have said, a not well-arranged book.